

## Plants Collected in Papua by C. E. Lane-Poole.

By C. T. WHITE, Government Botanist, and W. D. FRANCIS,  
Assistant Government Botanist, Brisbane.

(Text-figures 1-19.)

(Read before the Royal Society of Queensland, 25th October, 1926.)

Mr. C. E. Lane-Poole was commissioned by the Commonwealth Government to report on the forest resources of Papua. For this purpose he visited Papua, and in 1922 and 1923 made collections of plant specimens, principally of the trees. His material was forwarded to us for identification. The specimens were well preserved, and were accompanied by extensive notes on the appearance of the living plants, their economic properties, and the characteristics of the wood of the arboreal species. These notes were incorporated in his published report, "The Forest Resources of the Territories of Papua and New Guinea," Commonwealth Government publication, Melbourne, 1925. Dr. E. D. Merrill, when visiting Australia to attend the Pan-Pacific Science Congress in 1923, kindly looked through the material and made notes on some of the species which were of considerable value in identifying them. Some of the material was sent to different workers for report, and their help has been acknowledged in the text referring to the particular specimens submitted. After investigating the Forests of Papua Mr. Lane-Poole undertook a forest survey of the Mandated Territory of New Guinea. The botanical material collected in this territory has been partly investigated by the authors, who hope to publish the results of their determinations in these Proceedings next year.

Mr. Lane-Poole's collection is particularly interesting, as he made special efforts to obtain specimens of the larger forest trees, plants often neglected by the general collector.

The collections emphasise close relationship with the flora of South-eastern Asia rather than with Australia. A particularly interesting record from the point of view of plant geography is that of a new species of *Achradotypus* (Sapotaceæ), a genus only previously known from New Caledonia.

### FAMILY POLYPODIACEÆ.

*Dryopteris gongylodes* O. Ktze. Embi Lake, 225, sterile fronds, August, 1922.

### FAMILY TAXACEÆ.

*Podocarpus amara* Bl. Mt. Obree, spur leading from Laruni to summit, 377, specimens bearing young male amenta, February, 1923.

*Podocarpus neriifolius* Don. Foothills of Hydrographers Range, 238, immature flowering specimens, August, 1922; Baroi River, 50 miles down from where the Purari splits into its three main rivers, 275, specimen bearing a few young fruit, October, 1922.

*Podocarpus cupressina* R. Br. Owen Stanley Range, 5,000 feet, on trail between Kokoda and the Gap, 269, foliage specimens, August, 1922.

*Dacrydium elatum* Wall. Divide between Adai and Naro Rivers, 4,000 feet, 404, foliage specimens, February, 1923.

*Dacrydium falciforme* Pilger. Top of ridge between Adai and Tuhui Rivers, East Central Division, 397, foliage specimens only, February, 1923. These specimens were sent to the Royal Botanic Gardens, Kew, for the purpose of comparison. Major K. W. Braid reported as follows:—"The Papuan specimen is probably correctly named. Although the leaves are very variable in size, there are no other specimens at Kew with quite such small leaves. From specimens bearing only leaves it is difficult to make any decision, and the differences of shape and size may arouse suspicion and suggest that the plant may be new."

*Phyllocladus hypophyllus* Hook. f. Mt. Obree and Main Owen Stanley Range, 359A, foliage specimens, February, 1923.

#### FAMILY PINACEÆ.

*Araucaria Cunninghamii* Ait. Laruni, 5,000 feet (near Mt. Obree), 376, barren branchlets, February, 1923.

*Libocedrus papuana* F. v. M. Owen Stanley Range, 8,000-10,000 feet, 381, foliage specimens, February, 1923.

#### FAMILY GNETACEÆ.

*Gnetum Gnemon* Linn. Veimauri Creek, 80, fruiting specimens, May, 1922; forests of the foothills of the Hydrographers Range, 242, flowering specimens, August, 1922.

#### FAMILY PANDANACEÆ.

*Freycinetia angustissima* Ridl. Ridge between Adai and Naro Rivers, East Central Division, 410, fruiting specimens, February, 1923.

#### FAMILY PALMÆ.

*Arenga gracilicaulis* F. M. Bailey. Baroi River, 313, fruiting specimens, November, 1922.

#### FAMILY ARACEÆ.

*Epipremnum Zippelianum* Engl. Between Nornu and Naro Rivers, 4,000 feet, East Central Division, 401, flowering specimens, February, 1923.

*Pistia stratiotes* Linn. Embi Lake, Hydrographers Range, 256, August, 1922.

## FAMILY FLAGELLARIACEÆ.

*Susum anthelminticum* Bl. Banks of Embi Lake, Hydrographers Range, 253, flowering specimens (female), August, 1922.

## FAMILY CASUARINACEÆ.

*Casuarina nodiflora* G. Forst. Between Menari and Efogi at an altitude of 4,000–5,000 feet, Central Division, 426, fruiting specimens, February, 1923.

## FAMILY FAGACEÆ.

*Quercus spicata* Smith. Between Menari and Efogi, 5,000 feet, Central Division, 425, immature flowering specimens, February, 1923.

*Quercus spicata* Smith var. *depressa* King. Kargi, 5,000 feet on the western side of the Owen Stanley Range, 270, foliage specimens, and old acorns, August, 1922.

*Quercus Junghuhnii* Miq. Forests between Pernambata and Embi in the Hydrographers Range, 219, fruiting specimens, August, 1922; between Uberai and Sogeri, 427, flowering specimens, February, 1923.

*Quercus pseudo-molucca* Bl. Vanapa, about 12 miles above the village of Dora, 1,000–2,000 feet, 117, fruiting specimens, June, 1922.

*Quercus lamponga* Miq. Menari, Central Division, 418, specimens bearing male and female flowers, February, 1923.

## FAMILY ULMACEÆ.

*Celtis philippinensis* Blanco. Veimauroi Creek, 47, flowering specimens, June, 1922.

## FAMILY MORACEÆ.

*Antiaris toxicaria* Lesch. Baroi River, Purari Delta, 305, immature flowering specimens, October, 1922.

*Dammaropsis Kingiana* Warb. Forests between Kokoda, 1,200 feet, and gap in Owen Stanley Range, 7,000 feet, 260, fruiting specimens, August, 1922. The leaf in these specimens is inserted on a petiole 6 cm. long.

## FAMILY URTICACEÆ.

*Elatostemma macrophyllum* Brongn. var. *majusculum* H. Winkl. Road from Kokoda to Port Moresby, 4,000 to 5,000 feet on Owen Stanley Range, 259, flowering specimens, August, 1922.

*Elatostemma velutinicaule* H. Winkl. On trail from Kokoda to the Gap at 5,400 feet, 267, flowering specimens, August, 1922.

*Pipturus incanus* Wedd. Forests around village of Wasida and along the main path to Wire Rope, 168, flowering specimens, July, 1922.

*Pipturus argenteus* Wedd. Old farm lands, Menari, 5,000 feet, Central Division, 422, flowering specimens, February, 1923.

## FAMILY PROTEACEÆ.

*Grevillea densiflora* C. T. White. Menari, 4,000 feet, Central Division, 420, flowering specimens, February, 1923.

## FAMILY POLYGONACEÆ.

*Muehlenbeckia platyclados* Meissn. Laruni, Owen Stanley Range, 5,000 feet, 363, flowering specimens, February, 1923.

## FAMILY NYCTAGINACEÆ.

*Pisonia Brunoniana* Endl. Aroa, Central Division, 128, flowering specimens, June, 1922.

## FAMILY NYMPHÆACEÆ.

*Nymphæa gigantea* Hook. Embi Lake, Hydrographers Range, 250, flowering specimens, August, 1922.

## FAMILY RANUNCULACEÆ.

*Clematis Pickeringii* A. Gr. Forests around village of Wasida and along the main path to Wire Rope, 179, flowering and fruiting specimens.

## FAMILY MAGNOLIACEÆ.

*Drimys cyclopum* Diels. Mist forests, Mt. Obree, 8,000 feet, 347, flowering specimens, January, 1923.

## FAMILY ANONACEÆ.

*Cyathocalyx polycarpum* sp. nov. (Text-figure 1).

Arbor parva, 14 m. in altitudine, 45 cm. in circuitu (Lane-Poole); partibus junioribus et ramulis et foliis subtus et inflorescentiis plus vel minus dense stellato-pubescentibus. Ramuli teretes 3 mm. diam. infra apicem 14 cm. Folia alterna petiolata, petiolis pubescentibus ca. 1 cm. longis; lamina 13–20 cm. longis 2–2½ plo longioribus quam latæ ellipticis, ad basin rotundatis vel rare sub-cuneatis, ad apicem breviter acuminatis, marginibus recurvis, supra nitidis glabris costa media et nervis exceptis subtus stellato-pubescentibus, nervis lateralibus in utroque latere 11–14 in utraque pagina visibilibus sed subtus multo prominentioribus et elevatis. Inflorescentiæ laterales ca. 1.5–2.5 cm. supra foliorum axillares sitis; pedunculo communi brevissimo vel obsoleto bracteis brevis latis ornato; pedicellis 2–4, 1.2–2.5 cm. longis circiter medium bractea concava late ovata ornatis. Calyx alte 3-lobatus, lobis ad apicem recurvis, cum 2 mm. longo recurvo acumine 5 mm. longis, ad basin ca. 4 mm. latis. Petala exteriora 4 cm. longa ad basin concava et 5 mm. lata, in parte superiore 3 mm. lata, ad apicem obtusa; petala interiora similia sed breviora (3.5 cm. longa). Stamina pæne obconica in sectione transversa quadrangulares 1.5 cm. longa cum 1 mm. longo obliquo connectivo. Carpella ca. 20, glabra (in statu immaturo modo a nobis visa).

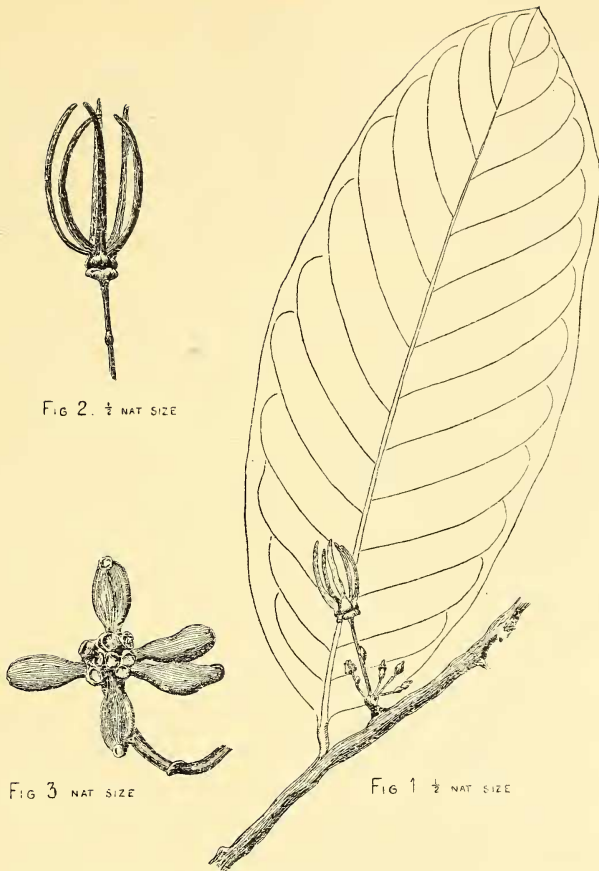
FIG 2.  $\frac{1}{2}$  NAT SIZE

FIG 3 NAT SIZE

FIG 1  $\frac{1}{2}$  NAT SIZE

Text-Figure 1.—*Cyathocalyx polycarpum* sp. nov. 1, flower-bearing twig; 2, flower; 3, immature carpels.

Forests between Perembati and Embi in the Hydrographers Range. No. 225. Small tree with stem 18 inches in girth and 45 feet overall; bark mottled grey and brown; smooth; flowers have a slightly spicy smell. Occurs throughout the rain forests of the Northern Division 1,500 feet, flowers from July to August.

Allied to *C. petiolatus* Diels Engl. Jahrb. 49 Band 1 Heft. 127, from which it differs in its larger leaves with more lateral nerves and in its much wider petals.

#### FAMILY MYRISTICACEÆ.

*Horsfieldia sylvestris* Warb. Veimauri Creek, 22, bearing male flowers; Buna, 231, bearing immature female flowers.

*Myristica pseudo-argentea* Warb. (?). Sageri, Northern Division, 206, fruiting specimens, July, 1922. Leaves rounded at base, slightly acuminate at apex, glaucous on underside, principal lateral nerves 17–19 on each side of midrib, blade 47 cm. long, 16 cm. broad, petioles 2–3 cm. long, the margins involute above. Fruit 6 cm. long, 4.3 cm. diameter, seed  $3.7 \times 2$  cm., fruiting pedicel 8 mm. long.

## FAMILY LAURACEÆ.

*Cinnamomum Massoia* Schewe. Veimauri Creek, 57, leaves only.

*Litsea grandifolia* Teschn. Veimauri Creek, 60, flowering specimens, May, 1922. The specimens differ from those described by Teschner (Engler's Bot. Jahrb. 58, 397) in the leaves being scarcely cuneate at the base and in some cases the apices being protracted into an acute point. In our specimens there are six flowers in the involucre in some cases.

## FAMILY HERNANDIACEÆ.

*Hernandia peltata* Meissn. Buna, 234, flowering specimens, August, 1922.

## FAMILY ROSACEÆ.

*Rubus rosafolius* Sm. Laruni Village, spur of Mt. Obree, 5,000 feet, 345, flowering specimens, February, 1923.

*Rubus moluccanus* Linn. Forests around village of Wasida and along main path to Wire Rope, 177, flowering and fruiting specimens, July, 1922.

## FAMILY LEGUMINOSÆ.

*Archidendron chrysocarpum* Lauterb. et K. Sch. Between Nornu and Naro Rivers, East Central Division, 399, flowering specimens, February, 1923. When better known these specimens may be found to represent a new species. They differ from the description of *A. chrysocarpum* (Fl. deutsch. Schutz. Sudsee, 344, 1901) in having broader leaflets, pedicels 2-3 times as long and petals pubescent on the outside.

*Albizzia fulva* sp. nov. (Text-figure 2).

Arbor magna, 45 m. in altitudine, 390 cm. in circuitu (C. E. Lane-Poole), partibus junioribus pilis ferrugineis dense et molliter vestitis, ramulis angularibus. Folia breviter petiolata, rhachide cum petiolo brevi 8-15 cm. longa dense ferrugineo-pubescenti inter pinnas supremas duas glandulis crassiusculis suborbicularibus obsita; pinnis 8-11 jugis oppositis vel inferne alternis; foliolis 10-20 jugis brevissime petiolulatis supra tenuiter subtus dense pubescentibus 3-4 mm. latis 2-3 plo longioribus oblique oblongis perinaequaliteris costa media margini antico proxima. Inflorescentia spicata spicis paniculas axillares ca. 10 cm. longas dispositis. Flores albi sessiles; calyce puberulo cupulari, tubo ca. 2 mm. longo, lobis 5 vel 6 inæqualibus deltoideis ca. 1 mm. longis; corolla campanulata extus pubescenti intus glabra, tubo 3-4 mm. longo, lobis 5 vel 6 lanceolatis acutis ca. 4 mm. longis. Tubus stamineus glaber 4-5 mm. longus, filamentis liberis numerosis 11-12 mm. longis; antheris dorsifixis latioribus quam longæ ca. 0.3 mm. latis. Ovarium glabrum breviter stipitatum, stylo tenuo. Legumen nobis non visum (Fruit: a thin pod, 5 inches long and  $\frac{1}{2}$  inch wide.—C. E. Lane-Poole, Forest Resources Pap. & N.G. 91. 1926).

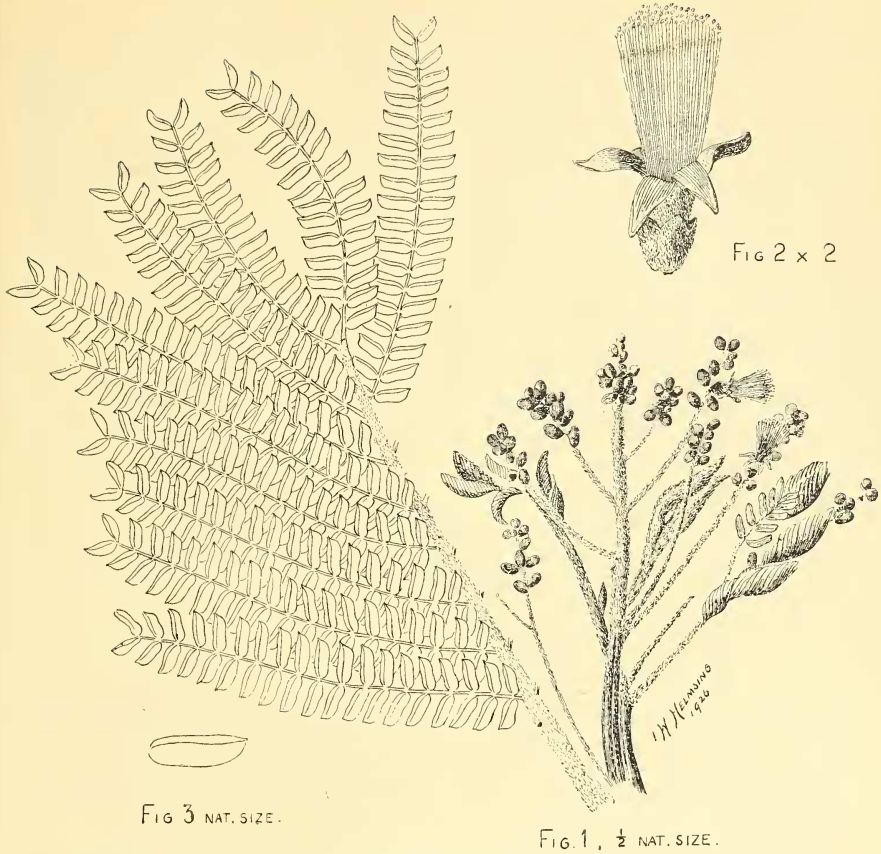


FIG 3 NAT. SIZE.

FIG. 1,  $\frac{1}{2}$  NAT. SIZE.

Text-Figure 2.—*Albizzia fulva* sp. nov. 1, flower-bearing twig; 2, flower; 3, leaflet.

3,000–5,000 feet on the Owen Stanley Range. Trail from Kokoda to the Gap, 263, a very large tree with stem of 13 feet girth and 150 feet high with an 80-ft. bole.

Among previously described species most closely allied to *A. falcata* (Linn.) Baker (*A. moluccana* Miq.), from which it differs in its dense ferruginous indumentum and the absence of a gland near the base of the petiole. The plant has somewhat the general facies of a *Serianthes*, but from the description of the pod given by the collector evidently belongs to *Albizzia*. It agrees in some respects with *Serianthes Ledermannii* Harms., the pod of which is also unknown, but differs from that plant in its markedly excentric midrib of the leaflets and the absence of a gland on the petiole.

*Adenanthera pavonina* Linn. Forests around village of Wasida and along main path to Wire Rope, 174, flowering specimens, July, 1922; Baroi River, Purari Delta, 316, flowering specimens, November, 1922.

*Cassia glauca* Lamk. Spur of Mt. Obree, 6,000 feet, 351, flowering and fruiting specimens, January, 1923.

*Cassia Bartonii* F. M. Bailey. Valley of the Asover, 4,000 feet, Upper Kemp Welch River, 344, flowering specimens, February, 1923.

*Stylosanthes mucronata* Willd. Port Moresby, 441, foliage specimens, April, 1923.

*Desmodium sinuatum* Blume. Spurs of Mt. Obree, 5,000 feet, 352, flowering specimens, January, 1923.

*Desmodium umbellatum* D.C. Port Moresby, 436, flowering specimens.

*Pongamia glabra* Vent. Close to sea-coast near Buna, 216, flowering specimens, July, 1922.

*Strongylodon lucidus* Seem. Junction of Adai and Inumu Rivers, 2,200 feet, East Central Division, 402, flowering specimens, February, 1923.

#### FAMILY OXALIDACEÆ.

*Oxalis corniculata* Linn. Lower spurs of Mt. Obree, 5,000 feet, 350, flowering specimens, January, 1923.

#### FAMILY RUTACEÆ.

*Evodia accedens* Bl. Old farm lands at 5,000 feet, Owen Stanley Range, 364, flowering specimens, February, 1923.

*Evodia hortensis* Forst. Baroi River, Purari Delta, 307, flowering and fruiting specimens, November, 1922.

*Evodia lamprocarpa* K. Sch. Forests around village of Wasida, and along main path to Wire Rope, 169A, fruiting specimens, July, 1922.

*Flindersia Pimenteliana* F. v. M. Mt. Obree to Laruni Spur, 7,000 feet, 382, foliage and empty capsules, February, 1923. This is a common species of North Queensland.

*Flindersia macrocarpa* sp. nov. (Text-figure 3).

Arbor magna 30 m. alta. Folia alterna imparipinnata 4-5 jugata, petiolata, rhachide cum petiolo 28-33 cm. longa, internodiis inter foliola ca. 4 cm. longis, petiolo ipso ca. 11 cm. longo; foliolis plerumque oppositis petiolulatis petiolulis 6-8 mm. longis, laminis 12-20 cm. longis ca. 3-plo longioribus quam latæ oblongo-lanceolatis sæpe falcatis apice acuminatis vel subacuminatis basi obliquis præcipue in foliolis inferioribus, nervis lateralibus utroque latere 16-22, costa media et nervis lateralibus et in pagina superiore et inferiore visibilibus, venulis vix visibilibus. Flores nobis non visi. Capsula 20 cm. longa—usque ad 25 cm. (Lane-Poole)—6-7 cm. diam. valvis dorso 2.5 cm. latis, rigidis puberulis tuberculis dense armatis, tuberculis 1 cm. altis et ad basin 5 cm. diam. e basi usque ad apicem sensim attenuatis, placentis 2.5 cm. altis dorso 1.3 cm. latis, seminibus ala cinctis cum ala 8 cm. longa 2-2.5 cm. lata, seminibus ipsis elliptico-oblongis 4 cm. longis 2.7 cm. latis.



FIG. 2,  $\frac{1}{2}$  NAT. SIZE.FIG. 1,  $\frac{1}{2}$  NAT. SIZE..J. W. HEMMING  
1926Text-Figure 3.—*Flindersia macrocarpa* sp. nov. 1, leaf; 2, fruit.

5,000 feet up the main Owen Stanley Range, No. 362. Large tree with stem of 8 feet in girth with a 70-ft. bole and 100 feet overall. Native name "Zizanu" (Laruni).

Capsule valves collected by C. T. White and described in Proceed. Linn. Soc. N.S.W. 46, 329 (1921) under doubtful species as *Flindersia papuana* F. v. M. belong to this species. The capsule valves collected by White were also recorded in Proc. Roy. Soc. Queensland 34, 38 as *F. papuana* F. v. M. As it is now evident that more than one species of *Flindersia* are represented in Papua, it is very doubtful to which one the immature fruit described by F. v. Mueller under *F. papuana* refers. It is, therefore, not possible to establish definitely the species to which Mueller's fruit belongs.

This species is distinguished from the previously described ones by its very long capsule.

#### FAMILY BURSERACEÆ.

*Canarium grandistipulatum* Lauterb. Vailala River, 338, fruiting specimens, January, 1923.

*Canarium lineistipula* Lauterb. et K. Sch. Forests of the Lower Kumusi, near Oitatandi village, 197, flowering specimens, July, 1922; Baroi River, Purari Delta, 306, flowering specimens, October, 1922.

*Canarium maluense* Lauterb. Foothills of the Hydrographers Range, 244, flowering specimens, August, 1922.

#### FAMILY MELIACEÆ.

*Xylocarpus Granatum* Koen. Within 100 yards of the beach near Buna, 218, flowering specimens, July, 1922; Galley Reach among mangroves, 343, fruiting specimens, January, 1923.

*Dysoxylum Pettigrewianum* F. M. Bailey. Baroi River, Purari Delta, 300, immature flowering specimens, October, 1922.

*Dysoxylum fissum* sp. nov. (Text figure 4).

Arbor 27 m. in altitudine, 183 cm. in circuitu (Lane-Poole), partibus junioribus non visis. Folia alterna (Lane-Poole), 6 jugis, imparipinnata petiolata, petiolo cum rhachide 65 cm. petiolo ipso 16 cm. longo, et rhachide et petiolo velutino-pubescenti supra applanato subtus rotundato basin versus marginibus acute angulato; foliolis oppositis vel infimis paribus alternis; foliolorum lateralium petiolulis 1-1.5 cm. longis, folioli terminalis petiolulo 10 cm. longo; laminis 8-9 cm. latis ca. 2½ plo longioribus supra omnino glabris, subtus nervis exceptis glabris anguste ovatis acuminatis basi infoliolis superioribus cuneatis in inferioribus rotundatis; nervis lateralibus utrinque 10-12 et in pagina inferiori et superiori visibilibus sed in pag. inf. multo prominentioribus, venulis haud distinctis. Flores racemosi, racemis 10-20 cm. longis in axillis foliorum fasciculatis; pedicellis 4-5 mm. longis, calyce tubulato extus ferrugineo-pubescenti, tubo 5 mm. longo, lobis 3 deltoideis vel late ovatis 1-2 mm.

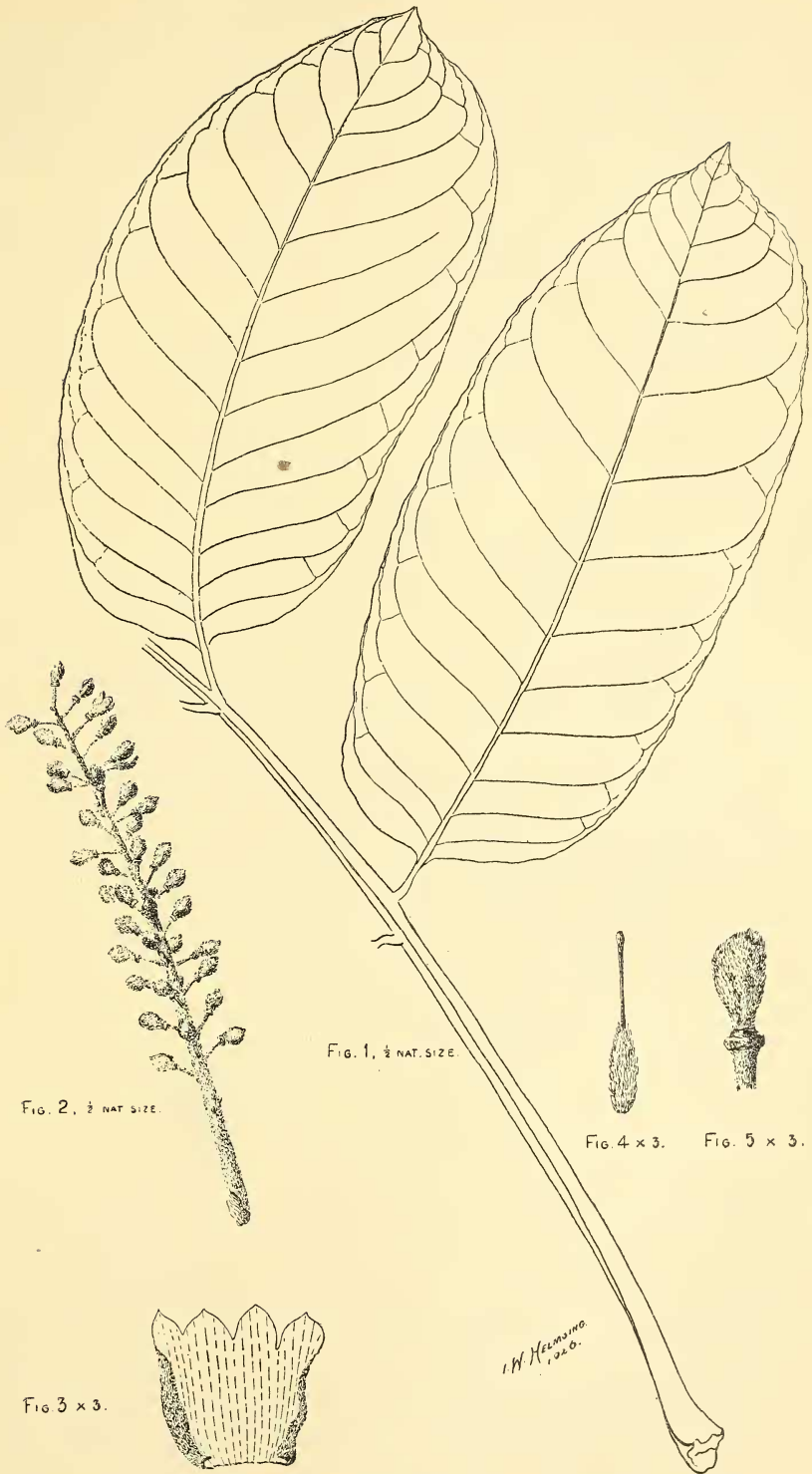


FIG. 1, 1/2 NAT. SIZE.

FIG. 2, 1/2 NAT. SIZE.

FIG. 4 x 3.

FIG. 5 x 3.

FIG. 3 x 3.

Text-Figure 4.—*Dysoxylum fissum* sp. nov. 1, lower part of leaf; 2, raceme with young fruit; 3, calyx laid open; 4, ovary and style; 5, immature fruit.

longis; petalis 4, extus in parte superiori dense pubescenti tubo stamineo liberis, tubo stamineo glabro 1 cm. longo 8-lobulato, lobis bifidis; antheris 8 inter lobulos sub sinibus affixis oblongis 1 mm. longis disco tubulato 2.5 mm. longo ovarium ambiens; ovario 4-loculari dense ferrugineo-pubescenti, stylo supra glabro infra pubescenti, stigma discoideo fere 1 mm. diam.

Baroi River, No. 282. Flowering in October. A tree of medium size, with stem 6 feet in girth, 60 feet bole, and 90 feet overall; narrow buttresses up to 9 feet.

*Aglaiia obliqua* sp. nov. (Text-figure 5).



Text-Figure 5.—*Aglaiia obliqua* sp. nov. 1, leaf; 2, part of panicle; 3, calyx and ovary.

Arbor partibus junioribus et petiolis et inflorescentiarum ramulis squamis stellatis ochraceis vestitis. Folia petiolata rhachide cum petiolo 18–20 cm; petiolo ipso 4–7 cm; foliolis 8–11 alternis vel rarius oppositis petiolulatis petiolulis 3–4 cm. laminis 2.5–3 cm. latis 2–4 plo longioribus ovatis vel oblongis sæpe leviter falcatis ad apicem obtuse sed prominenter acuminatis, ad basin perobliquis nervis lateralibus utrinque 12–15 costa media et nervis lateralibus et in pagina superiore et inferiore visibilibus venulis in pagina inferiore solum visibilibus. Paniculae axillares ambitu

pyramidales foliis longiores. Flores sessiles vel breviter pedicellati, calyce extus squamis stellatis vestito, tubo cupulari 1 mm. longa, lobis 5 obtusis multo latioribus quam longi calycis tubo multo brevioribus; petalis 5 glabris ovatis obtusis fere 2 mm. longis; tubo stamineo glabro ovoideo vel urcolato 1-2 mm. longo, antheris 5 lanceolatis 0.8 mm. longis sessilibus intus tubi basin versus insertis; ovario globoso, glabro.

Camp 8 miles west of Buna, Northern Division, on the Ambogi River, No. 132.

This species belongs to the section *Euaglaia*, and is characterised by the insertion of the anthers inside near the base of the urceolate staminal tube.

*Aglaia sapindina* Harms. Forests around village of Wasida and along main path to Wire Rope, 162, flowering specimens, July, 1922.

#### FAMILY MALPHIGIACEÆ.

*Ryssopterys timorensis* Bl. Menari, 5,000 feet, Central Division, 421, flowering specimens, February, 1922.

#### FAMILY EUPHORBIACEÆ.

*Breynia cernua* Muell. Arg. Forests around village of Wasida and along main path to Wire Rope, 166, fruit-bearing specimens, July, 1922.

*Baccaurea papuana* F. M. Bailey. Forests between Pernambata and Embi in the Hydrographers Range, 230, flowering specimens, August, 1922.

*Daphniphyllum glaucescens* Bl. Mt. Obree, Laruni Spur, 9,000 feet, 378, specimens bearing immature male flowers, February, 1923.

*Macaranga riparia* Engl. Forests around village of Wasida and along main path to Wire Rope, 164, flowering specimens, July, 1922. Mr. Lane-Poole remarks that the species is found on old farm lands everywhere.

*Aleurites moluccana* Willd. Aroa, Central Division, 126, foliage specimens.

*Endospermum formicarum* Becc. Veimaui Creek, 21, bearing young fruit, June, 1922.

#### FAMILY ANACARDIACEÆ.

*Mangifera minor* Bl. Forests around village of Wasida and along main path to Wire Rope, 170, flowering specimens, July, 1922.

*Pleiogynium Solandri* Engl. Aroa, 125, flowering and fruiting in May and June, 1922.

*Spondias dulcis* Forst.f. Baroi River, Purari Delta, 301, foliage specimens only, October, 1922; Vailala River, 328, fruiting specimens, December, 1922.

*Semecarpus australiensis* Engl. Vanapa River, about 6 miles above the village of Dora, 93, leaf-bearing specimens only.

## FAMILY SAPINDACEÆ.

*Pometia pinnata* Forst. Banks of the Veimauri Creek, Central Division, 5, flowering specimens.

*Alectryon repando-dentatus* Radlk. Port Moresby, 438, fruiting specimens, April, 1922.

*Dodonea viscosa* Linn. Grass lands and old farm lands near Menari, 5,000 feet, Central Division, 419, fruiting specimens, February, 1923.

*Ganophyllum falcatum* Bl. Baroi River, Purari Delta, 281, 310, foliage specimens, October, 1922.

## FAMILY RHAMNACEÆ.

*Alphitonia moluccana* Teijsm. and Binn. Forests around village of Wasida and along main path to Wire Rope, 169, fruiting specimens, July, 1922.

## FAMILY ELÆOCARPACEÆ.

*Elæocarpus megacarpus* Schltr. Valley of the Mimai, head waters of Kemp Welch River, 4,000 feet, 355, specimens bearing immature fruit, January, 1923.

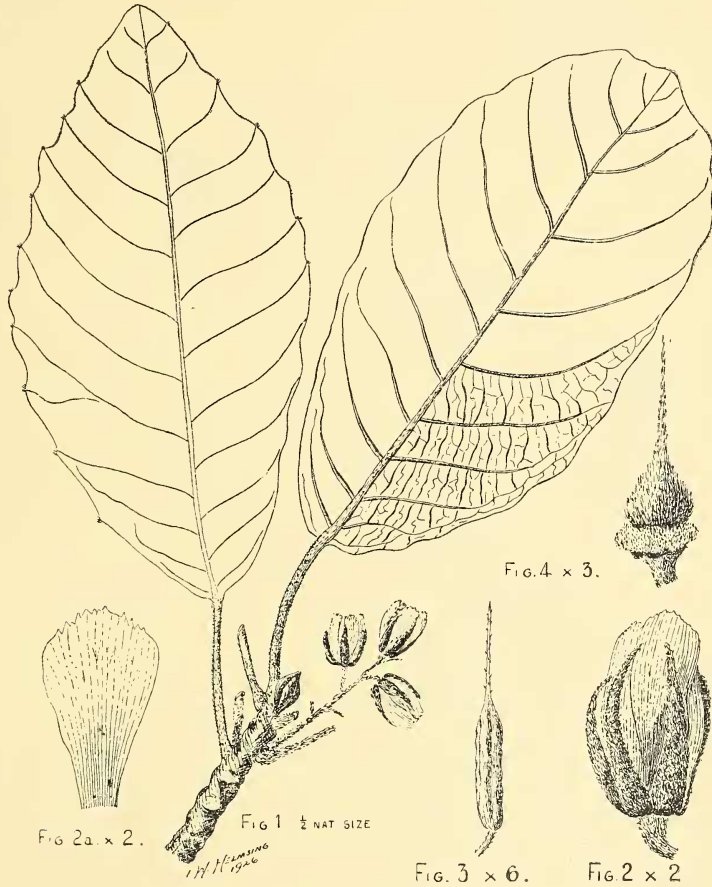
*Elæocarpus comatus* sp. nov. (Text-figure 6).

Arbor magna 240 cm. in circuitu (Lane-Poole) ramulis et petiolis et inflorescentiis dense ferrugineo pubescentibus. Ramuli teretes 6 mm. diam. infra apicem 6 cm. Folia ad apices ramulorum conferta, petiolata, petiolis 5-7 cm. longis; laminis 15-19 cm. longis  $1\frac{1}{2}$ -2 plo longioribus quam latæ, obovatis et ad apicem et ad basin ipsam rotundatis, marginibus sinuatis, pilorum fasciculis minutis nervos laterales præcipuos terminantibus supra glabris costa media et nervis lateralibus dense ferrugineo-pubescentibus exceptis; subtus costa media et nervis lateralibus dense ferrugineo-pubescentibus ceteram tenuiter pubescentibus, nervis lateralibus in utroque latere 11, costa media et nervis et venulis reticulatis et in pagina superiore et inferiore visibilibus sed subtus multo prominentioribus et elevatis. Racemi axillares 3-5 cm. longi; pedicellis 1.5 cm. longis. Sepala 8-10 mm. longa lineares extus dense pubescentes intus glabra. Petala 1-1.1 cm. longa extus vinculo media leviter pubescenti ceteram glabra ad apicem dentata dentibus triangularibus acutis ca. 1 mm. longis. Stamina numerosa ca. 8 mm. longa, filamentis hirsutis 1-2 mm. longis, antheris pubescentibus linearibus 3 mm. longis, seta terminali pubescenti 2-3 mm. longa. Ovarium obtuse 4-angulatum, dense ferrugineo-pubescente, 2-4 loculare; stylo apicem versus glabro, 5-6 mm. longo.

Kumusi River, Northern Division, No. 185. Large tree with stem 8 feet in girth and 55 feet bole; buttressed to a height of 5 feet. Flowers in July. Native name "Ohe."

Named *E. comatus* in allusion to the tufts of hairs terminating some of the nerves on the margin of leaves. Allied to *E. amplifolius* Schltr., from which it is distinguished by its smaller leaves and flowers, the latter less than half the size of the flowers of *E. amplifolius*.

*Elæocarpus sepikanus* Schltr. Forests around village of Wasida and along main path to Wire Rope, 178, flowering specimens, July, 1922. The ovary is 3-celled in these specimens.



Text-Figure 6.—*Elæocarpus comatus* sp. nov. 1, flower-bearing twig; 2, flower; 2a, petal; 3, anther; 4, ovary and disk.

*Elæocarpus novo-guineensis* Warb. Buna on the Ambogi River, 141, fruiting specimens. The racemes are only 3.5–5 cm. long in our specimens.

*Antholoma Tieghemi* F. v. M. Owen Stanley Range, 6,000 feet, 370, flowering specimens. The specimens differ from F. v. Mueller's description (*Journal of Botany* 31, 322, 1893) in having slender peduncles 2.5–3 cm. long. The stamens are 8–9 mm. long, including the long point of the anthers.

## FAMILY TILIACEÆ.

*Columbia æquilateralis* sp. nov. (Text-figure 7).

Arbor mediocris (Lane-Poole), ramulis pilis et stellatis et simplicibus dense obtectis. Folia alterna, petiolata, petiolis 6–8 mm. longis, laminis 4–5 cm. latis, 2–3 plo longioribus oblongo-ovatis ad basin rotundatis vel subcordatis ad apicem acuminatis, marginibus serratis supra tenuiter

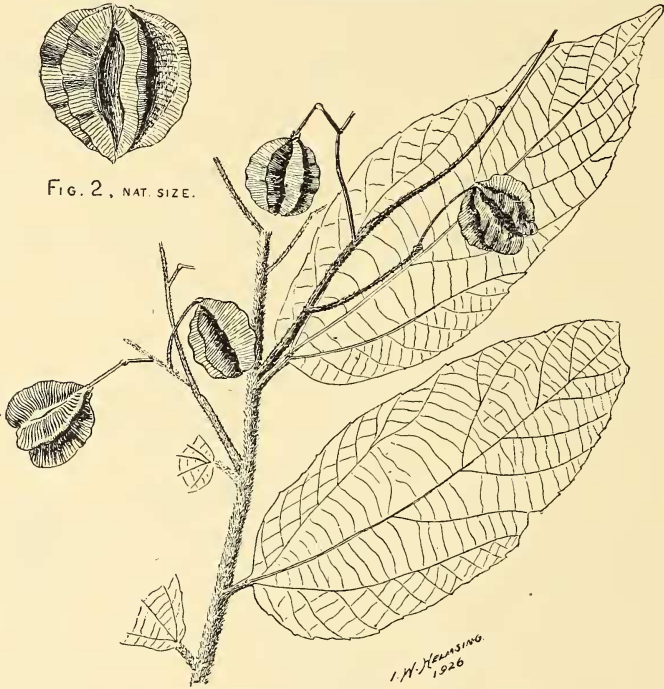


FIG 1.  $\frac{1}{2}$  NAT. SIZE

Text-Figure 7.—*Columbia æquilateralis* sp. nov. 1, fruit-bearing twig; 2, fruit.

subtus densissime pilis stellatis vestitis; costa media et nervis lateralibus et venulis transversis utrinque visibilibus sed in pagina inferiore prominentioribus. Paniculæ terminales et ex axillis superioribus orientes. Flores ignoti. Fructus pedicellatus (pedicello 8–9 mm. longo) alis 3 vel 4 instructus obovatus cum alis usque ad 2 cm. longus et 1.8 cm. latus.

Aroa No. 132. A medium-sized tree with a light grey bark.

Specimens of the above plant were forwarded to the Director of the Botanic Gardens, Buitenzorg, Java (Dr. W. Docters van Leeuwen), and he answered: "The Chief of the Herbarium replies that the material collected in Papua by Mr. Lane-Poole has been compared with the specimens in the Buitenzorg Herbarium in which collections of specimens from New Guinea are lacking. From the literature at hand *C. celcibica* seems to be a very near ally to this species, which the late Dr. Koorders identified with *C. serratifolia* by comparison at Kew Herbarium. Still there are some differences—viz., the leaves are nearly equal-sided at the



base, whereas in all the specimens from the Celebes and the Philippines the leaf bases are very oblique, and the fruits are greater and truncate at the top."

## FAMILY MALVACEÆ.

*Urena lobata* Linn. Old farm lands on lower spurs of Mt. Obree, 5,000 feet, 349, flowering and fruiting specimens, January, 1923.

*Hibiscus tiliaceus* Linn. Coast near Buna, 208, flowering specimens, July, 1922.

Affinities *Hibiscus D'Albertisii*, F. v. M. Veimauroi Creek, 28, flowering specimens, June, 1922. May prove to be arboreal form of *H. D'Albertisii*, from which species it differs chiefly in the mostly non-cordate leaves, the non-cordate bracts of the involuere, and the less prominent venation of the leaves.

*Thespesia populnea* Corr. Along sea beach near Buna, 214, flowering specimens, July, 1922.

## FAMILY STERCULIACEÆ.

*Kleinhovia hospita* Linn. Forests around village of Wasida and along main path to Wire Rope, 182, flowering specimens, July, 1922. Mr. Lane-Poole remarks that this species occurs very frequently in places where there has been a native garden, and that the young leaves are cooked as a vegetable.

*Pterygota Forbesii* F. v. M. Veimauroi Creek, 24, flowering and fruiting specimens, June, 1922.

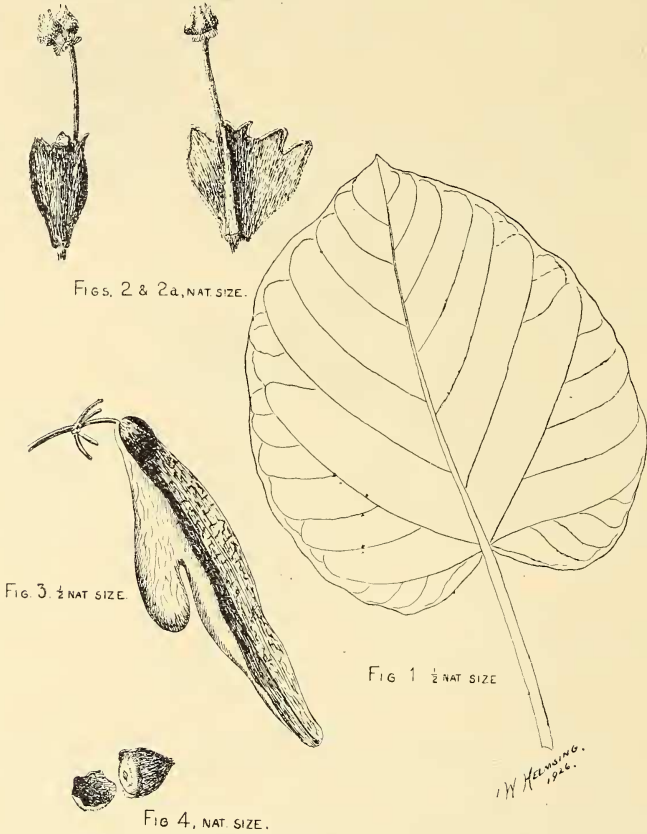
*Pterocymbium stipitatum* sp. nov. (Text-figure 8).

Arbor magna 37 m. alta, foliis ante anthesin deciduis (Lane-Poole), partibus junioribus pilis stellatis fuscis vestitis sed mox glabris ramulis teretibus. Folia petiolata, petiolis 4-6 cm. longis, laminis cordatis orbicularibus vel late ovatis 8-10 cm. latis apice breviter et obtuse acuminatis 5 nerviis, costa media et nervis et venulis utrinque visibilibus sed subtus prominentioribus. Paniculæ apicem versus ramulorum defoliorum confertæ, ca. 8 cm. longæ, ramulis pilis stellatis paucis vestitis, pedicellis tenuis 2-4 mm. longis sub floribus articulatis. Calyx campanulatus extus glaber intus pubescens cum lobis 2-3 mm. longis, ovato-lanceolatis acutis 1.2-1.5 cm. longus, lorum marginibus ciliatis. Columna genitalis pubescens vel hirsuta pilis simplicibus, 2.5 cm. longis antheris 15 sessilibus omnibus ca. 1 cm. longis simplici serie dispositis. Ovarium 5-lobatum pubescens ca. 4 mm. diam., stylo 2 mm. longo. Folliculi membranacei valde nervosi 10 cm. longi, lobo superiore 1.7 cm. lato lobo inferiore apice rotundato ca. 2 cm. longo 1.5 cm. lato; semine ovoideo 7 mm. longo.

Allied to *P. javanicum* R. Br., from which it differs in its longer staminal column (which exceeds the calyx) and shorter calyx lobes.

Baroi River, Purari Delta, No. 279, flowering in October. A very large tree with stem 9 feet in girth, 100 feet bole, and 130 feet overall. Apparently deciduous (C. E. Lane-Poole).

*Heritiera littoralis* Ait. Vanapa River, about 6 miles above the village of Dora, 85, leaf-bearing specimens only; Vailala River, 333, flowering specimens, December, 1922.



Text-Figure 8.—*Pterocymbium stipitatum* sp. nov. 1, leaf; 2, flower; 2a, flower with calyx laid open, showing the column; 3, follicle; 4, seed.

#### FAMILY DILLENACEÆ.

*Wormia quercifolia* sp. nov. (Text-figure 9).

Arbor magna insignis 30 m. alta, 365 cm. in circuitu (Lane-Poole), partibus novellis sericeo-pubescentibus. Ramuli teretes in juventute striati 4 mm. diam. infra apicem 10 cm. Folia petiolata; petiolis 4-5 cm. longis striatis in juventute alatis, alis  $4 \times 0.6$  cm.; laminis 9-16 cm. longis  $1\frac{1}{3}$ -2 plo longioribus quam latæ, ovato-orbicularibus vel late ellipticis apice ipso acuminato vel subacuminato, marginibus prominenter undulato-sinuatis vel in foliis parvioribus crenatis, nervis lateralibus in utroque latere 7-8, costa media et nervis utrinque visibilibus sed subtus prominentioribus et valde elevatis, venis transversis numerosissimis in siccis utrinque prominulis. Racemi terminales (?) vel ex axillis supremis

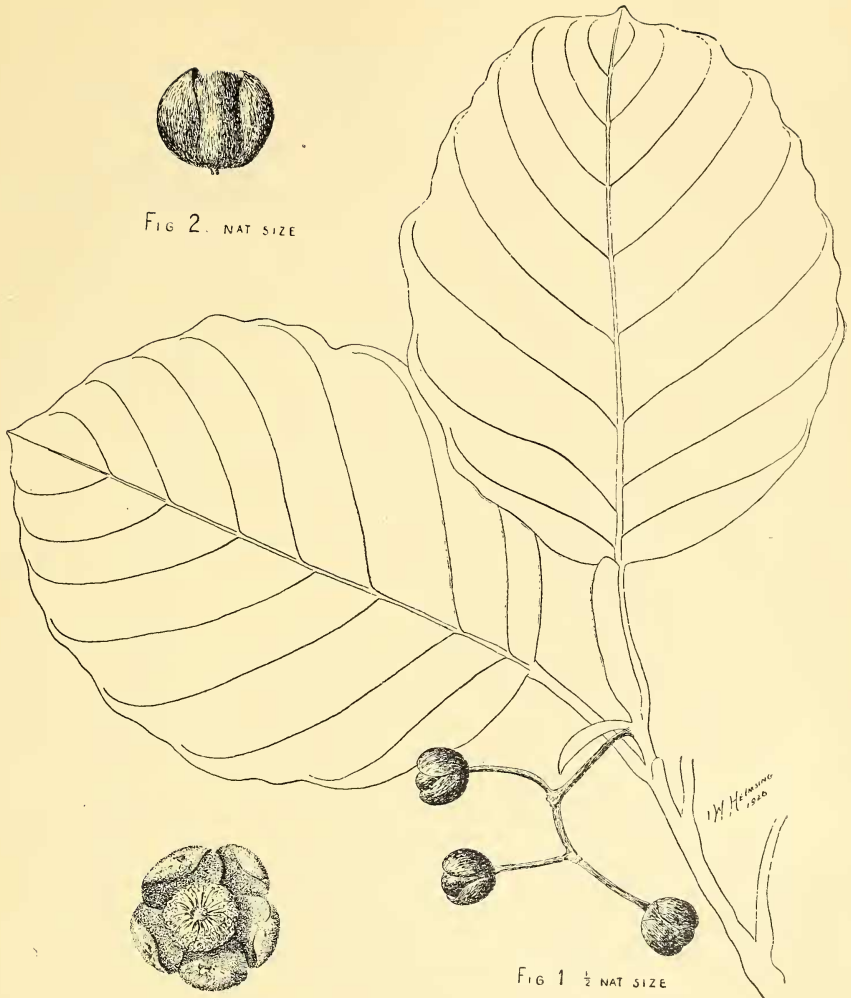


FIG 2. NAT SIZE

FIG 1  $\frac{1}{2}$  NAT SIZEFIG 3.  $\frac{1}{2}$  NAT SIZE.

Text-Figure 9.—*Wormia quercifolia* sp. nov. 1, flower-bearing twig; 2, unopened flower; 3, flower with calyx opened, exposing the stamens.

orientes, ca. 4-flori, rhachide valde flexuosa 3–4 cm. longa; pedicellis 1.5–2.5 cm. longis. Flores glabri, sepalis 5, orbicularibus concavis carnosis, exterioribus 1.8 cm. diam. interioribus 1.4 cm. diam.; petalis (mox deciduis et in alabastris a nobis modo visis) sepalis similibus sed minoribus. Stamina numerosa 10–12 mm. longa. Carpella 7–10, stylo tenuo 7 mm. longo.

Forests between Pernambata and Embi in the Hydrographers Range. No. 226. A large handsome tree, 80 feet bole and 100 feet overall, with stem 12 feet in girth, spur rooted but not buttressed. Flowers July-August in the Northern Division.

Allied to *Dillenia macrophylla* Diels, from which it differs in its much smaller leaves.

*Saurauja plurilocularis* sp. nov. (Text-figure 10).

Arbor glabra parva (6 m. alta—Lane-Poole). Folia basin versus sensim attenuata et petioli per totam longitudinem decurrentes cum petiolis 34–48 cm. longis, 3–4 plo longioribus quam lata; petiolis ipsis ca. 4 cm. longis anguste alatis ad basin dilatatis et subauriculatis; laminis oblanceolatis apicibus breviter acuminatis, marginibus in parte inferiore integris vel fere integris, in parte superiore distincte serrulatis; costa media ad basin ca. 5 cm. lata, nervis lateralibus tenuibus in utroque latere 35 vel pluribus utrinque visibilibus sed subtus prominentioribus, venulis subtus visibilibus. Inflorescentiæ cymosæ, cymis trichotomis trifloris; pedunculo 11–16 cm. longo; pedicellis 5–8 cm. longis. Flores albi (Lane-Poole); calycis lobis 5 ovatis vel orbicularibus obtusis 1.5–1.7 cm. longis; petalis 5, 2.5–3.5 cm. longis ca. 1.5 cm. latis per  $\frac{1}{4}$ – $\frac{1}{5}$  partem longitudinis eorum connatis; staminibus ca. 100 (in phalanges 5 petalis oppositas dispositis?), filamentis tenuis 2.5 mm. longis ad basin brevissime connatis, antheris oblongis 4 mm. longis inter loculos ad apicem emarginatis, loculis poro subterminale vel rima brevi dehiscentibus; ovario glabro 7-loculari, stylis 5 mm. longis per totam longitudinem eorum connatis.

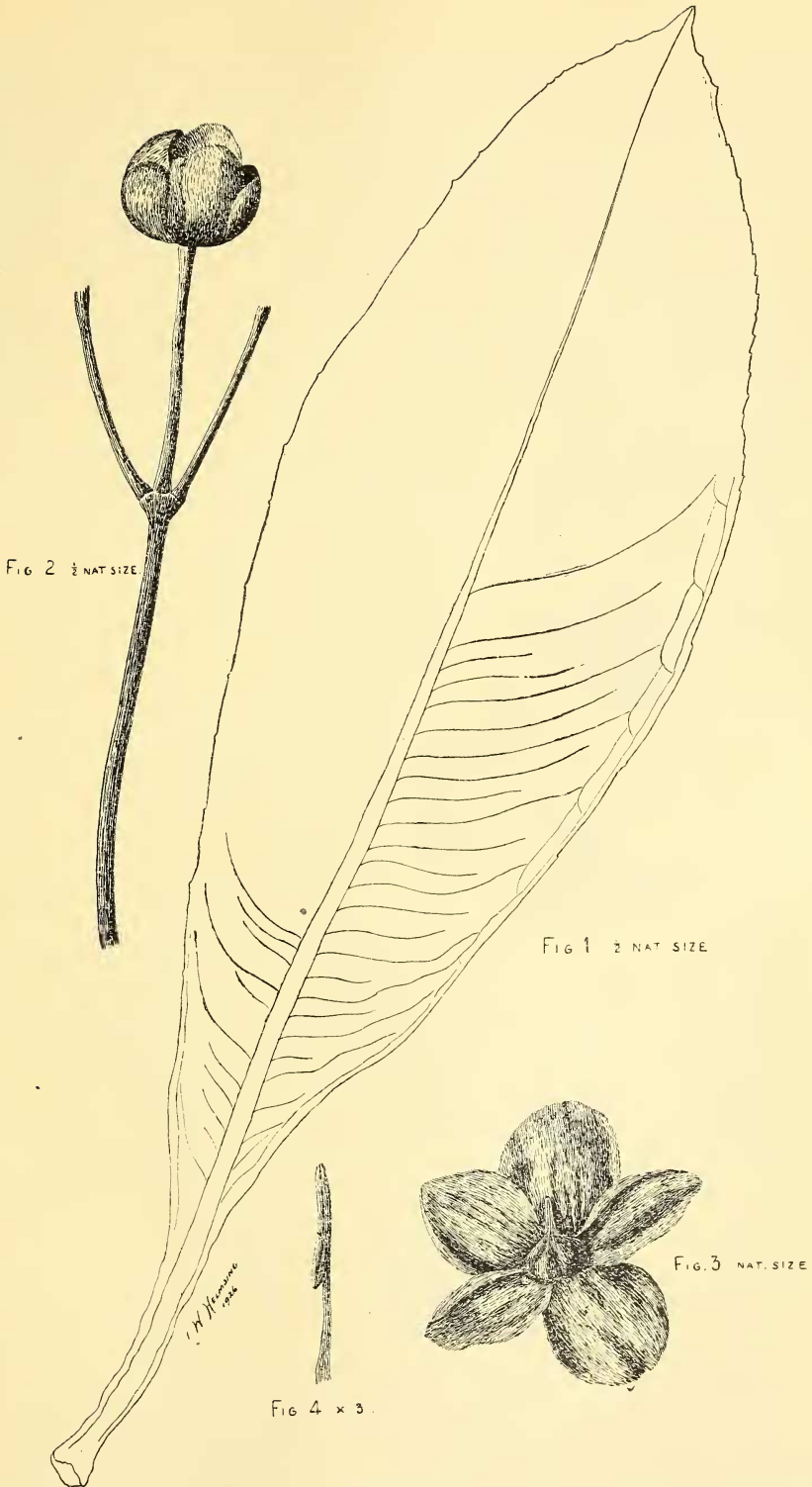
Banks of the Upper Naro River between Mt. Obree and Kargi (Owen Stanley Range). No. 416. A small tree 20 feet high. It grows with its roots practically in the torrent and has for its neighbour *Dammaropsis Kingiana*. The flowers are white but the petals are a faint rose pink at the base.

The type material consists of two leaves and three cymes, all detached, and it is not certain whether these latter represent complete inflorescences or only parts of a larger, more complex one.

This species appears to be exceptional in the genus on account of its 7-celled ovary. In Gilg's description of the genus in the *Natürlichen Pflanzenfamilien* it is stated that the ovary is 5–3 celled. The species is also somewhat remarkable because of the absence of the scales and hairs which so frequently characterise species of the genus, although the very young shoots, when they become known may be found provided with the peculiar indumentum. Its long-pedunculate, cymose, triflorous inflorescence resembles that of *Saurauja pendula* Bl., but the new species is readily distinguished from *S. pendula* by its united styles, glabrous ovary and greater number of stamens.

*Saurauja vallium* sp. nov.

Frutex vel arbor parva usque ad 6 m. alta, partibus junioribus et pedicellis et calycis lobis extus squamis appressis obsitis; squamis brunneis vel stramineis lanceolatis acuminatis usque ad fere 0.5 mm. longis. Folio petiolata, petiolis 6–10 mm. longis; laminis 4.5–7 cm. longis  $1\frac{1}{2}$ –2-plo longioribus quam latæ obovatis vel late oblanceolatis margine serratis apice abrupte acuminatis basi late cuneatis vel leviter rotundatis, supra glabris subtus pallidioribus et glandulis stellatis tenuiter obsitis; nervis lateralibus in utroque latere 6–8 subtus



Text-Figure 10.—*Saurauja plurilocularis* sp. nov. 1, leaf; 2, trichotomous cyme, bearing an unopened flower; 3, flower with calyx opened and stamens removed, showing the ovary; 4, stamen.

prominulis venulis reticulatis visibilibus sed non distinctis. Flores axillares fasciculati fasciculis 1-3 floris e tuberculis parvis squamosis orientibus, pedicellus tenuis valde inæqualis 3 mm.-2 cm. longis. Calyx alte lobatus, lobis 5 ovatis vel fere orbicularibus obtusis 6-8 mm. longis. Petala 5, glabra, 10-11 mm. longa. Stamina numerosa monadelphæ, parte connata ca. 3 mm. longa parte libera ca. 2 mm. longa; antheris oblongis 2 mm. longis loculis ad apicem leviter divergentibus, poris terminalibus dehiscentibus; stylis connatis 3-4 mm. longis.

Forests of the ravines of the grassy hills around Iorobaiva 3,000-4,000 feet., between Mt. Obree and Kargi, Owen Stanley Range. No. 431. Shrub to small tree 20 feet overall, flowers pink, showy, flowering February, 1923.

This species is allied to *S. bifida* Warb., from which it differs in its much smaller leaves and smaller non-paniculate inflorescence.

*Saurauja Poolei* sp. nov. (Text-figure 11).



Text-Figure 11.—*Saurauja Poolei* sp. nov. 1, flower-bearing twig; 2, flower; 3, stamen; 4, flower with petals and stamens removed, showing the ovary and styles.

Arbor parva (usque ad 6 m. alta) habitu subdiffusa (Lane-Poole); partibus junioribus et ramulis et foliis et inflorescentiis setulis fulvis obtectis. Folia petiolata; petiolis 1.5-3 cm. longis; laminis 11-18 cm.

longis ca. 2-plo longioribus quam late supra parcius subtus pallidioribus et multo densius præcipue in nervis setis obtectis, obovatis, basi cuneatis, apice acuminatis, marginibus setiferis setis ca. 1 mm. longis et 2-4 mm. remotis, nervis lateralibus in utroque latere 11-13, costa media et nervis utrinque visibilibus sed subtus prominentioribus et elevatis, venulis subtus prominulis. Pedunculi ex axillis superioribus orientes, subumbellati, 2-3 flori, 3-4 cm. longi; pedicellis 1-2 cm. longis. Calyx extus setosus, intus glaber alte 5-lobatus, lobis 5 late ovatis 8-10 mm. longis et fere æque latis. Petala 5, glabra 1.2-1.5 cm. longa. Stamina glabra, numerosa; filamentis 1.5-2.5 mm. longis; antheris linearibus 1.7 mm. longis; loculis poris obliquis terminalibus dehiscentibus. Ovarium glabrum, globosum 5-loculare; stylis 5 glabris, 4 mm. longis.

Forests around village of Wasida, No. 165. Small tree up to 20 feet; spreading, almost rambling habit; undergrowth in rain forests. Found in all rain forests up to 2,000 feet. Flowers in July in the Buna district.

This species belong to Diels' section, *Setosæ* (Engl. Bot. Jahrb. lvii., 448) and is closely allied to *S. Schumanniana* Diels., from which it differs in its broader leaves (up to 9 cm. broad), petioles twice as long and larger flowers.

#### FAMILY OCHNACEÆ.

*Schuurmansia Henningsii* K. Sch. Foothills of the Hydrographers range, 237, fruiting specimens, August, 1922; Owen Stanley Range, 6,000 feet, 371, flowering specimens, February, 1923.

#### FAMILY GUTTIFERÆ.

*Calophyllum inophyllum* Linn. Coast near Buna, 209, flowering specimens, July, 1922.

*Garcinia Hollrungii* Lauterb. Vanapa River, about 12 miles above the village of Dora, 115, fruiting specimens, June, 1922. Somewhat unlike those described by Lauterbach (Engl. Bot. Jahrb. 58 Bd., 1-2 Heft. p. 20), the fruit in these specimens are globose or pyriform with a prominent depression around the stigma; they measure 4.5 cm. in diameter and are divided into 6-8 cells. The seeds are immature.

*Garcinia assugu* Lauterb. Veimaurei Creek, 58, fruiting specimens, June, 1922; forests between Pernambata and Embi in the Hydrographers Range, 224, fruiting specimens, August, 1922.

#### FAMILY DIPTEROCARPACEÆ.

*Anisoptera polyandra* Bl. Buna on the Ambogi River, 136, fruiting specimens, June, 1922; forests between Pernambata and Embi in the Hydrographers Range, 223.

*Hopea papuana* Diels. Vanapa River, about 12 miles above the village of Dora, 113, fruiting specimens, June, 1922.

*Vatica papuana* Dyer. Vailala River, 327, foliage specimens, December, 1922; Sudest (sent to C. E. Lane-Poole), 435, foliage specimens.

## FAMILY COCHLOSPERMACEÆ.

*Cochlospermum Gillivraei* Benth. Port Moresby, 434, flowering specimens, Baker (Jour. Bot. 61, Appendix p. 4, 1923) has named the common Port Moresby plant as a distinct variety (var. *papuaana*). The leaves on Lane-Poole's No. 434 measure up to 11 cm. long on petioles up to 13 cm. The outer sepals in Queensland specimens are usually smaller than the inner, though not always so markedly as in the Papuan plant.

## FAMILY FLACOURTIACEÆ.

*Homalium pachyphyllum* Gilg. Vailala River, 334, flowering specimens, December, 1922.

## FAMILY DATISCACEÆ.

*Octomeles sumatrana* Miq. Veimauri Creek, 34, remains of dry flowers picked up from ground beneath the trees, September, 1922.

## FAMILY SONNERATIACEÆ.

*Sonneratia alba* Sm. On sand beach near Buna, 217, flowering specimens, July, 1922.

## FAMILY LECYTHIDACEÆ.

*Planchonia timorensis* Bl. Veimauri Creek, 2, in flower, June 1922.

*Barringtonia speciosa* Linn. Buna, sea beach just within reach of spring tides, 235, flowering specimens, August, 1922.

*Barringtonia calyptrocalyx* K. Sch.(?). Forests of the Lower Kumusi near Oititandi village, 191, flowering specimens, July, 1922. Differs from K. Schumann's description (Fl. Kaiser Wilhelm's Land, 91, 1889) in having broader leaves which are entire on the margins and pubescent on the underside.

*Barringtonia Forbesii* Bak. fil. Vanapa, 122, flowering specimens, June, 1922.

## FAMILY RHIZOPHORACEÆ.

*Rhizophora conjugata* Linn. The coast near Buna, 213, flowering specimens, July, 1922.

*Bruguiera Rheedii* Bl. The coast near Buna, 212, flowering specimens, July, 1922.

## FAMILY COMBRETACEÆ.

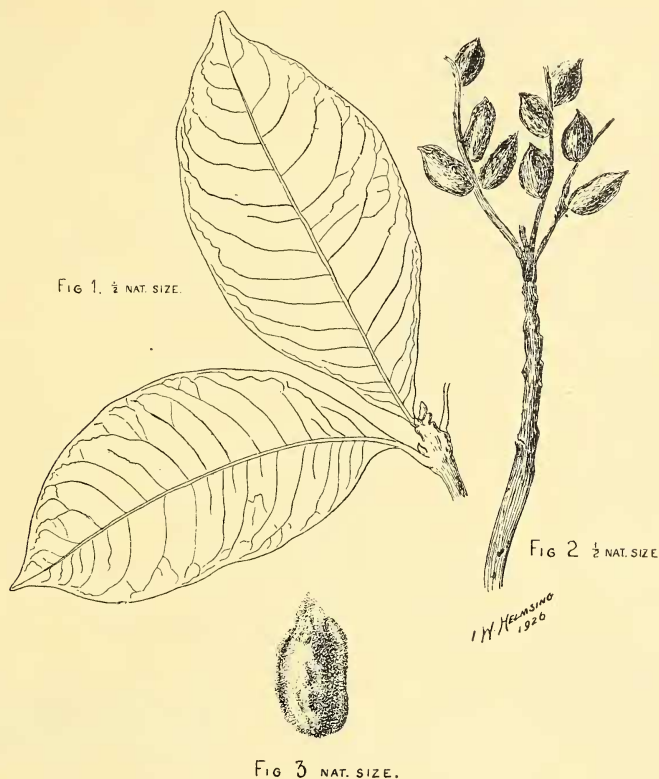
*Terminalia foveolata* sp. nov. (Text-figure 12).

Arbor 37 m. alta, partibus novellis ferrugineo-pubescentibus, ramulis teretibus. Folia alterna; petiolis 1-1.2 cm. longis supra minute ferrugineo-pubescentibus; lamina 4-5.5 cm. latis ca. 2 plo longioribus ellipticis oblanceolatis vel obovatis in sicco sub-nitidis sub-chartaceis subtus in axillis nervorum præcipuorum foveolatis basi angustis apice obtuse acuminatis, nervis lateralibus utrinque ca. 10, costa media et nervis et venulis et in pagina inferiore et superiore prominentibus.



Spicæ 5-6 cm. longæ ex axillis foliorum superiorum orientes. Flores non visi. Fructus (immaturus) compressus  $1.8 \times 1.1 \times 0.6$  cm. ovatus apice acutus vel acuminatus margine anguste alatus vel acute angulatus; pericarpio exiguo, endocarpio valde rugoso duro et ligneo.

Among Papuan species most closely allied to *T. complanata* K. Sch., from which it is distinguished by its glabrous leaves and non-glandular petioles.

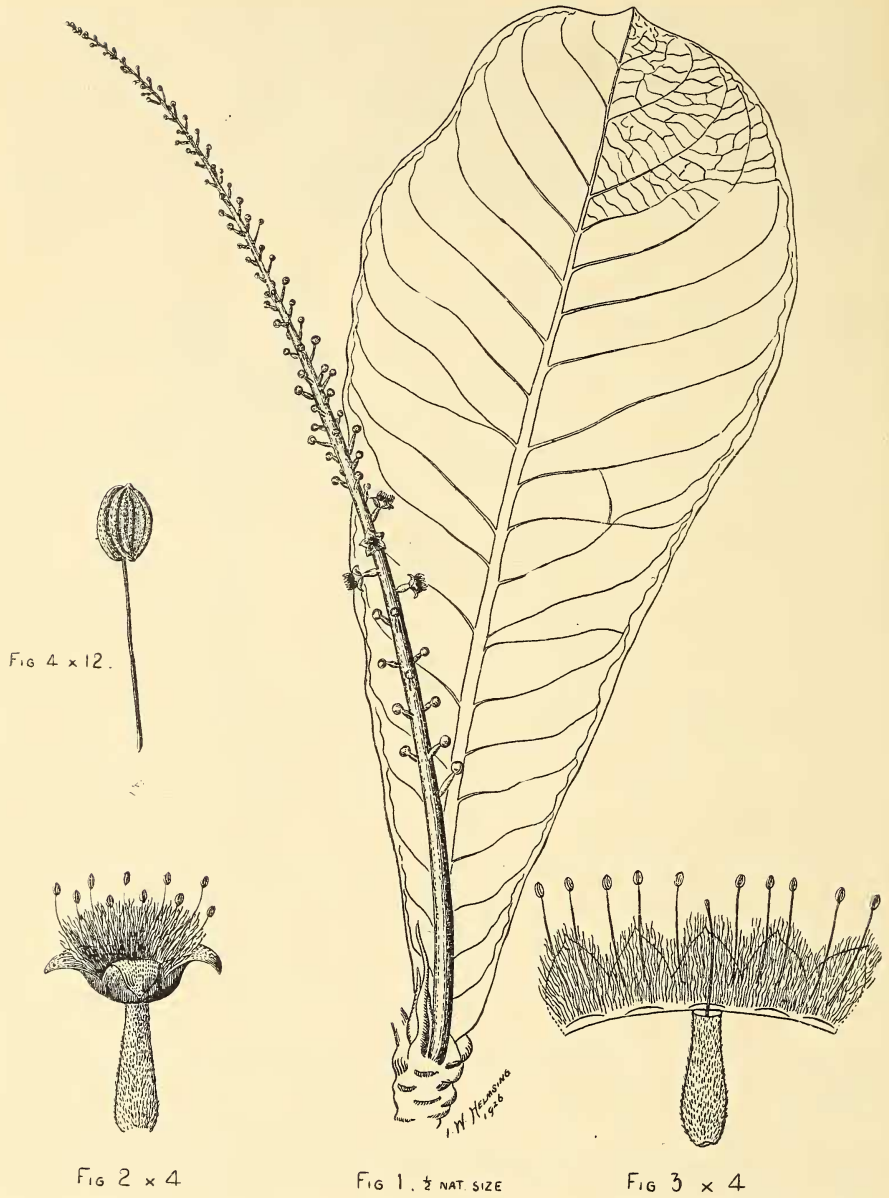


Text-Figure 12.—*Terminalia foveolata* sp. nov. 1, leaf-bearing twig; 2, twig bearing fruiting spikes (the leaves have become detached); 3, fruit.

Baroi River. No. 285. Immature fruit gathered in October. A large tree with stem 15 feet in girth and 120 feet overall. Very heavily buttressed up to 15 feet.

*Terminalia catappoides* sp. nov. (Text-figure 13).

Arbor magna, partibus junioribus pilis ferrugineis vestitis. Folia ramulorum ad apices conferta, sessilia vel perbrevis petiolata; petiolis complanatis usque ad 3 mm. longis et latis; laminis 9-13.5 cm. latis 2.5 plo longioribus oblanceolatis ad apicem rotundatis vel subcordatis, apice ipso perbrevis acuminato, basin versus angustatis, basi ipsa anguste cordata vel auriculata, venis et venulis subtus prominentibus, costa media supra basin versus dense ferrugineo-pubescentibus, costis secundariis utrinque 18-23 plerumque angulo  $80^\circ$  de costa media adscendentibus, costa media



Text-Figure 13.—*Terminatia catappoides* sp. nov. 1, flower-bearing shoot; 2, flower; 3, flower with calyx laid open, showing the stamens; 4, stamen.

et venis et venulis subtus in pagina inferiore dense ferrugineo-pubescentibus, lamina ceterum glabra. Spicæ axillares usque ad 30 cm. longæ, rhachide pubescenti. Flores hermaphroditi, spicæ in parte inferiore siti, calycis tubo extus in parte inferiore pubescenti, 6 mm. longo, limbo 5-6 mm. diam., parte integra extus puberula intus pilis longis vestita; lobis ovatis vel deltoideis, 1.5-2 mm. longis; stylo glabro tenui 5 mm. longo. Flores masculi spicæ in parte superiore siti, pedicellati, pedicello usque ad 5 mm. longo, filamentis tenuis 4 mm. longis,

antheris ovatis, basifixis 0.6 mm. longis. Fructus (in statu imperfecto modo visus) pericarpio suberoso  $5 \times 4 \times 3$  cm. sulcis ea. sex fibris faretis sulcato, endocarpio osseo.

Veimauri Creek. No. 36. A wide range all round Papua from sea level to 1,000 feet. A large tree 16 feet in girth with a bole of 80 feet and 130 feet overall. Stands leafless for about a month in the dry season (C. E. Lane-Poole).

Allied to *T. catappa* L., from which it is distinguished by its longer narrow leaves with more numerous primary nerves on each side of the midrib.

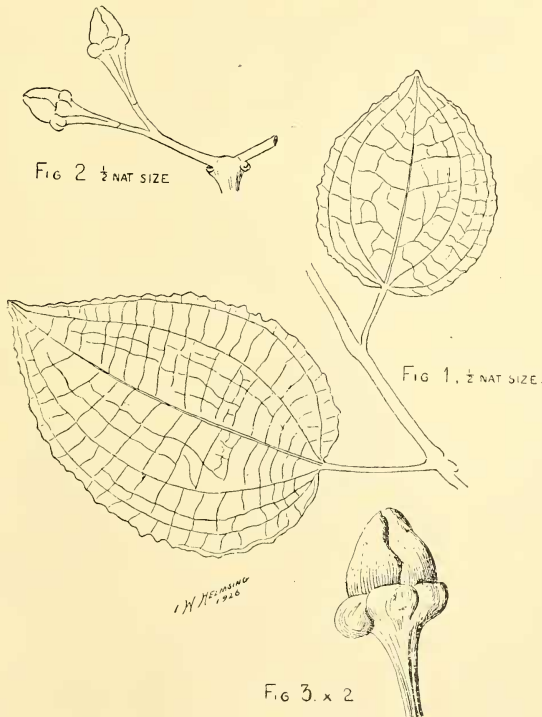
FAMILY MYRTACEÆ.

*Octamyrtus insignis* Diels. Forests around village of Wasida and along the main path to Wire Rope, 163, flowering specimens. The specimens differ from Diels's description (Engler's Bot. Jahrb. 57 Bd. 3-5 Heft, 374) in having longer petioles, attaining 8 mm., and much narrower calyx lobes attaining only 6 mm. in breadth.

FAMILY MELASTOMACEÆ.

*Poikilogyne setosa* sp. nov. (Text-figure 14).

Frutex, ramulis et petiolis et venis subtus et inflorescentiæ rhachide minutis setis dense vestitis. Ramuli teretes vel subquadrangulares. Folia opposita petiolata; petiolis 2-4 cm. longis; laminis 7-10 cm.



Text-Figure 14.—*Poikilogyne setosa* sp. nov. 1, part of branchlet; 2, part of inflorescence; 3, unopened flower.

longis, ca  $1\frac{1}{3}$  plo longioribus quam latae, cordatis ovatis margine denticulatis acuminatis tri vel quinquenerviis nervis et venis transversis et venulis in sicco utrinque visibilibus sed subtus prominentioribus et elevatis. Paniculae terminales trichotomae, pedicellis 5–7 mm. longis ad apicem bracteolis 2–3 minutis productis. Flores a nobis (alabastra modo probabiliter visa) calycis tubo turbinato 7–9 mm. longo setis tenuis vestito, apicem versus 5–angulis vel tuberculis producto limbo obscure 5-lobato sinibus inter lobos angulas vel tubercula alternantibus; petalis glabris ovatis obtusis 4–5 mm. longis; staminibus 10 glabris, filamentis complanatis 2.5 mm. longis, antheris oblongis vel linearibus fere 5 mm. longis, stylo glabro tereti 5 mm. longo.

Mt. Obree at an elevation of 7,000 feet. No. 346. A shrub of scrambling habit, flowers lake-coloured.

Among previously described species most closely allied to *P. arfakensis* Bak. f., from which it differs in its cordate leaves and the absence of the dense golden brown indumentum from the upper surface of the leaves.

#### FAMILY ARALIACEÆ.

*Boerlagiodendron Sayeri* Harms. Laruni Spur, Mt. Obree, 7,000 feet, 390, specimens bearing immature flowers, February, 1923.

*Anomopanax philippinensis* Harms. Mt. Obree to Laruni Spur, 7,000 feet, 388, flowering specimens, February, 1923. *Polyscias cibaria* W. and F. ined. in Lane-Poole, "Forest Resources, Papua and New Guinea," 129, 1925.

#### FAMILY ERICACEÆ.

*Agapetes Moorhousiana* F. v. M. Forests between Pernambata and Embi in the Hydrographers Range, 222, flowering specimens, August, 1922.

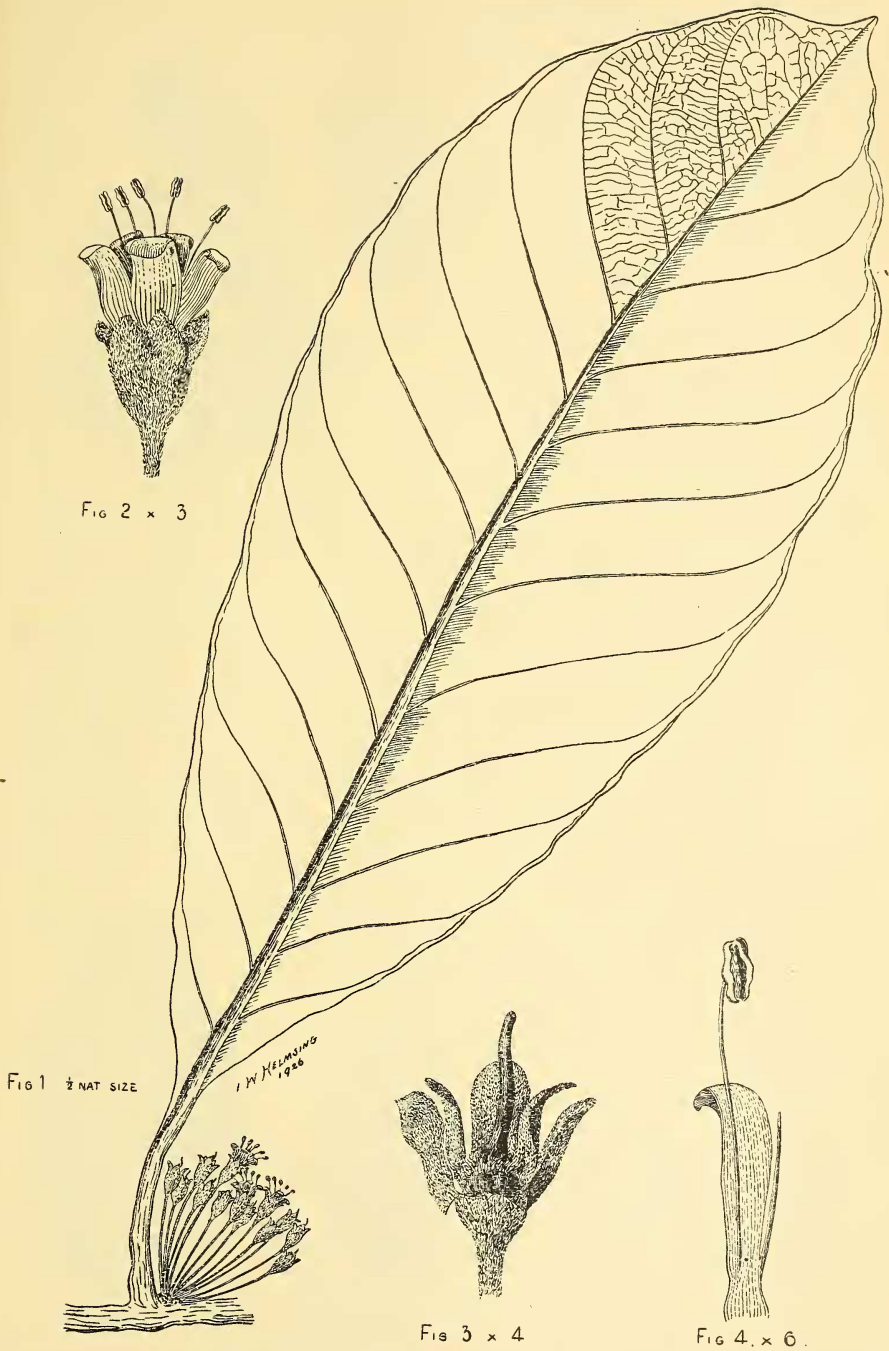
#### FAMILY MYRSINACEÆ.

*Ægiceras majus* Gært. Buna, 233, flowering specimens, August, 1922.

#### FAMILY SAPOTACEÆ.

*Sideroxylon anteridiferum* sp. nov. (Text-figure 15).

Arbor magna, ramulis pilis ferrugineis dense vestitis. Folia alterna, petiolata; petiolis ferrugineo-pubescentibus 4–5 cm. longis 3 mm. crassis; laminis 13–19 cm. latis ca.  $2\frac{1}{4}$  plo longioribus obovatis apice rotundatis, apice ipso aliquando breviter acuminato, basi cuneatis, supra costa media et nervis lateralibus dense sed ceteram parce pubescentibus; subtus ubique densissime et breviter ferrugineo-pubescentibus, nervis lateralibus utrinque 12–16, costa et nervis et venulis transversis et in pagina superiore et inferiore visibilibus sed in pag. inf. elevatis et prominentioribus. Flores in fasciculis axillaribus dispositi, fasciculis 10–25 floris, pedicellis 1.5–2.5 cm. longis fere 1 mm. crassis; calyce dense



Text-Figure 15.—*Sideroxylon anteridiferum* sp. nov. 1, part of twig, showing leaf and inflorescence; 2, flower; 3, flower with calyx laid open and corolla removed, showing the ovary and style; 4, part of the corolla, showing a stamen.

pubescenti tubo campanulato 5 mm. longo lobis 5 imbricatis ovatis obtusis 2.5 mm. longis; corolla glabra tubo 3 mm. longo, lobis 5 oblongis obtusis 3-4 mm. longis, staminibus fertilibus 5 glabris lobis contra affixis et eos excedentibus, antheris ovato-oblongis 1.5 mm. longis, filamentis subulatis; staminodiis sub sinibus corollæ affixis et lobis brevioribus in parte superiore subulatis basin versus paulum expansis; ovario hemisphærico ad apicem pubescenti, stylo glabro 6-7 mm. longo.

Buna District, on the plain. No. 161. July, 1922. A large tree with stem 8 feet in girth with a 70-ft. bole, heavily buttressed. The specific name is derived from the large buttresses of the tree.

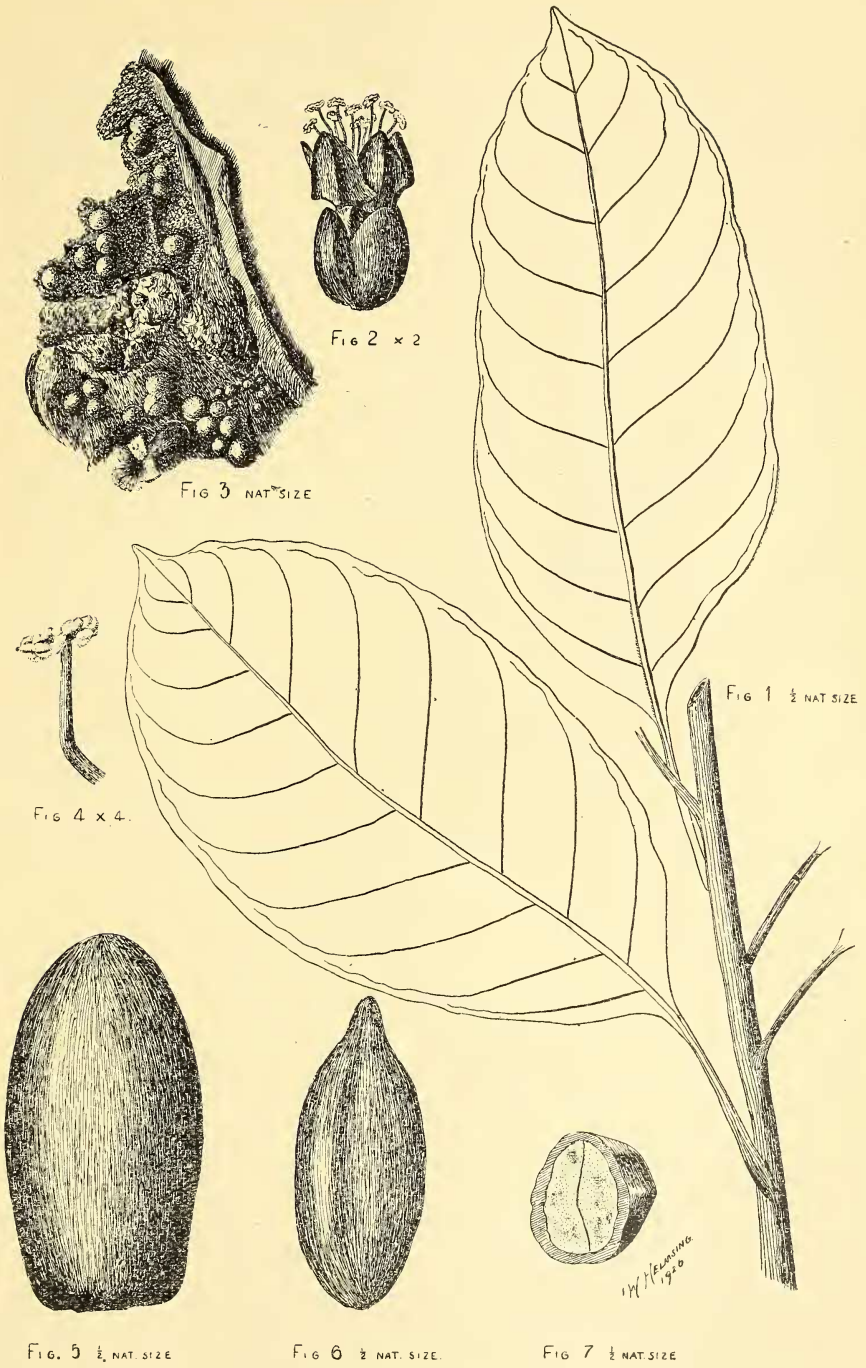
*Achradotypus benefici* sp. nov. (Text-figure 16).

Arbor parva, glabra (partibus junioribus non visis) ramulis teretibus. Folia alterna petiolata, petiolis 3-6 cm. longis laminis 6.5-12 cm. latis 2 plo longioribus ellipticis coriaceis breviter acuminatis ad basin cuneatis saepe per partem superiorem petioli decurrentibus, nervis lateralibus utrinque 8-10, costa media et nervis et venulis utrinque visibilibus sed in pagina inferiore multo prominentioribus. Flores albi e tumoribus in trunco orientes (tumoribus 8 cm. altis et 20 cm. diam.); pedicellis brevissimis vel 0; calycis lobis 5 imbricatis orbicularibus 6 mm. diam; corollæ tubo 6-7 mm. longo lobis ovatis vel late ellipticis obtusis 3-4 mm. longis; staminibus 10 in faucibus corollæ affixis eorum duobus lobis omnibus oppositis, filamentis teretibus 5-6 mm. longis, antheris horizontalis (?) et peltate affixis lanceolatis apiculatis 2.5 mm. longis margine undulatis, staminodiis vel squamis 5 sub sinibus corollæ affixis 3 mm. longis apicem versus expansis et in tres lobos divisus, lobo medio setaceo lobis lateralibus latis et ad apicem dentatis; pistillo 6 mm. longo glabro, ovario 5-loculari. Fructus atroviridis vel pæne niger ovoideus 9-10 cm. longus 5 cm. diam.; semine 8 × 3.2 × 2.8 cm. basi obtuso, cicatrice per totam longitudinem fereque dimidiam peripheriam extensa, testa nitida castanea 2-4 mm. crassa, albumine 0, radice conica 7 mm. longa, cotyledonibus magnis et carnis.

Embi in the Hydrographers Range. No. 227. Flowering and fruiting August, 1922. A small tree with stem 18 inches in girth and 150 feet high.

This little tree is the most feared sorcerers' tree in the Northern Division. Its appearance with the black fruit standing out at right angles to the stem is certainly remarkable and may possibly be the cause of its choice for sorcery purposes. So feared is it that I was unable to touch it, far less carry the specimens I collected, and it took some tact and some ingenuity to get away with them (C. E. Lane-Poole).

The specific name is derived from the fact that the species is a sorcerers' tree. The specimens were submitted to Dr. A. Guillaumin, of the Museum National d'Histoire Naturelle, Paris, for comparison with types of previously described species, and he replied that so far as he could see the species was entirely distinct from any previously-known ones. The genus was previously only known from New Caledonia.



Text-Figure 16.—*Achradotypus benefeci* sp. nov. 1, part of leaf-bearing branchlet; 2, flower; 3, part of bark from stem of tree, showing buds and an expanded flower; 4, stamen; 5, fruit; 6, seed; 7, seed in transverse section.

## FAMILY SYMPLICACEÆ.

*Symplocos aggregata* sp. nov. (Text-figure 17).

Arbor parva 9 m. in altitudine 45 cm. in circuitu (Lane-Poole); partibus novellis pubescentibus; ramulis glabris primum subangularibus deinde teretibus 3 mm. diam. infra apicem 10 cm. Folia alterna glabra in sicco flavescentes petiolata; petiolis 1.5–2 cm. longis; laminis 11–19 cm. longis 2–2½ plo longioribus quam latæ, obovatis vel oblanceolatis integris vel apicem versus minute serrulatis, basi cuneatis, apice acuminatis nervis lateralibus in utroque latere 3–6 utrinque visibilibus sed subtus multo



Text-Figure 17.—*Symplocos aggregata* sp. nov. 1; flower-bearing twig; 2, flower with calyx laid open and corolla and stamens removed, showing the ovary and style.

prominentioribus; venulis interdum subtus prominulis interdum pæne visibilibus. Inflorescentiæ axillares globosæ ca. 1 cm. diam.; floribus confertis albis et fragrantibus (Lane-Poole). Calycis tubus cupularis vel late campanulatus 4 mm. longus; lobis 5 orbicularibus marginibus tenuiter ciliolatis 2 mm. longis fere 3 mm. latis. Corollæ tubus 1–1.5 mm. longus; lobis 5 ovatis vel obovatis obtusis 5 mm. longis. Stamina 50 vel plura;



filamentis tenuis 4-5 mm. longis, antheris orbicularibus 2-3 mm. latis. Ovarium ad apicem 5 lobatis, lobis pubescentibus, stylo minuto, subconico glabro vel fere glabro, fere 1 mm. longo.

Forests of the Lower Kumusi River, near Oitatandi Village. No. 183. A small tree with stem 18 inches in girth, 30 feet high; bark grey, smooth, flowers white, fragrant. In rain forests as undergrowth.

#### FAMILY LOGANIACEÆ.

*Couthovia brachyura* Gilg and Benedict. Buna on the Ambogi River, 138, flowering specimens, July, 1922.

*Fagraea racemosa* Jack. Forests around the village of Wasida and along main path to Wire Rope, 181, flowering specimens, July, 1922.

#### FAMILY GENTIANACEÆ.

*Limnanthemum indicum* Thw. Embi Lake, Hydrographers Range, 251, flowering specimens, August, 1922.

#### FAMILY APOCYNACEÆ.

*Alstonia scholaris* R.Br. Bank of Veimauri Creek, 29.

*Alstonia longissima* F.v.M. Vanapa River, 103, immature flowers, and empty follicles.

*Voacunga papuana* K.Sch. Page's Camp, Veimauri, 440, flowering specimens, May, 1922.

#### FAMILY ASCLEPIADEÆ.

*Hoya dimorpha* F. M. Bailey. Foothills of the Hydrographers Range, 243, flowering specimens, August, 1922.

#### FAMILY BORAGINACEÆ.

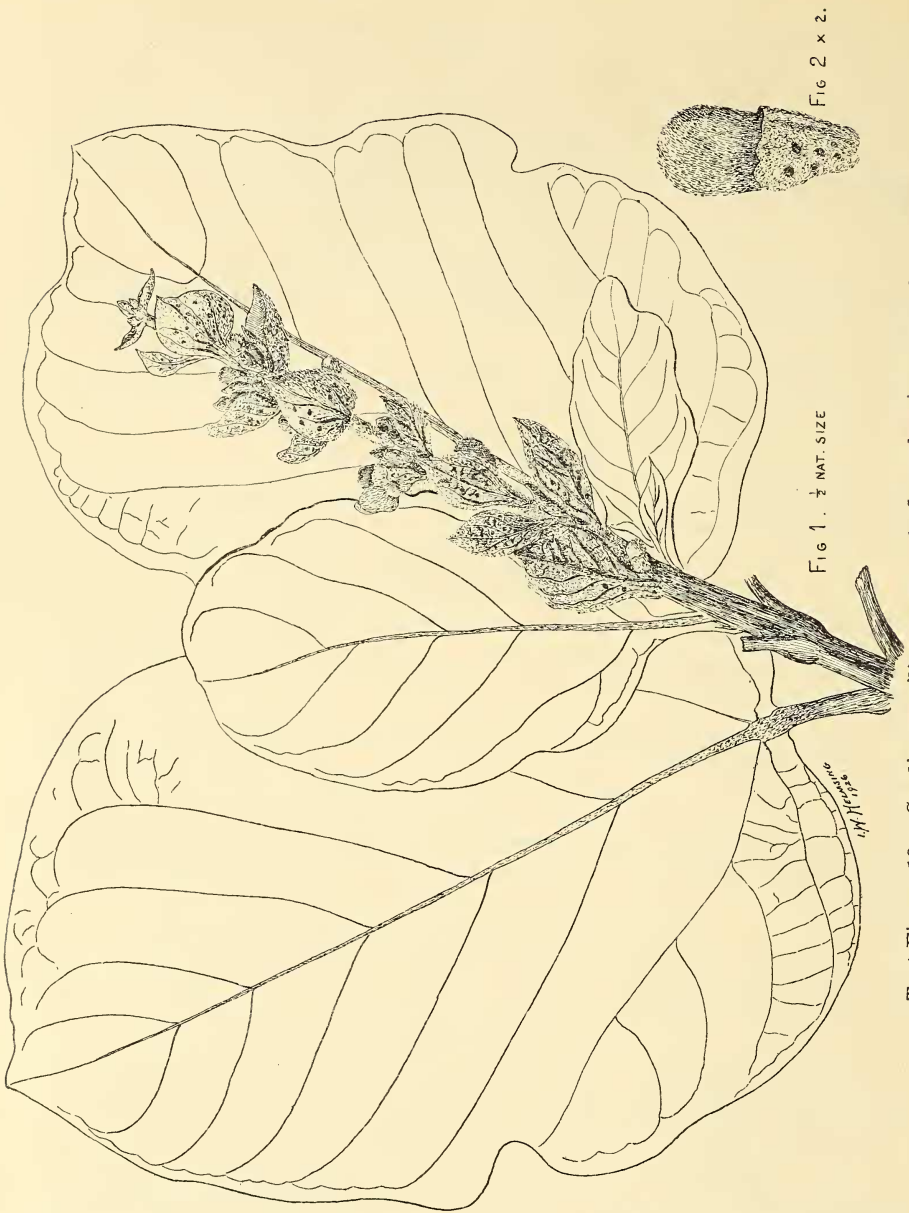
*Cordia subcordata* Lam. Port Moresby, near sea shore, 439, flowering specimens, April, 1922.

#### FAMILY VERBENACEÆ.

*Geunsia farinosa* Bl. Forests around village of Wasida and along main path to Wire Rope, 167, flowering specimens, July, 1922.

*Gmelina sessilis* sp. nov. (Text-figure 18).

Arbor 34 m. alta (Lane-Poole) ramulis dense ferrugineo-pubescentibus sulcatis 5 mm. diam. ca. 10 cm. infra inflorescentiam. Folia opposita, petiolata; petiolis dense pubescentibus supra concavis subtus convexis 2-3 cm. longis; laminis coriaceis ovato-orbicularibus supra sparse subtus dense pubescentibus 12-22 cm. longis et fere æque latis vel laminis angustioribus 1½ plo longioribus quam latæ, apice obtusis vel rarius obtuse acuminatis, basi cordatis vel rotundatis margine late sinuatis vel integris, glandulis 1-3 ad basin utriusque lateris costæ mediæ, nervis lateralibus utrinque 7-9, nervis et venulis et in pagina superiore et inferiore prominentibus supra impressis subtus valde elevatis. Inflorescentia terminalis angusta et spiciformis 10-12 cm. longa 4 cm. lata, basi foliosa; cymulis



Text-Figure 18.—*Gracina sessilis* sp. nov. 1, flower-bearing twig; 2, unopened flower. The dark spots on the calyx in 2 and on the bracts in 1 indicate glands.

oppositis vel cyclis, in parte inferiore inflorescentiæ interruptis, apicem versus confertis; bracteis exterioribus foliaceis magnis concavis ovatis extus dense pubescentibus et glandulis glabris atris punctatis, intus glabris; bracteis interioribus similibus sed parvis; bracteolis ovato-lanceolatis extus dense pubescentibus 7 mm. longis. Calyx campanulatus ferrugineo-pubescentibus, extus glandulis paucis glabris punctatus, intus glaber obscure bilabiatus vel margine sinuatus vel 3-4 lobatus, lobis latis. Corolla extus ad basin tubi glabra ceterum dense pubescens, intus tenuiter pubescens, 1.7 cm. longa (tubo ipso 1 cm. longo) bilabiata, labio superiore 2-lobato, labio inferiore 3-lobato. Filamenta pubescentes 7-9 cm. longa;

antheris basi cordatis apicem versus dorsifixis 1.5 cm. longis 1 mm. latis. Ovarium glabrum obovoideum ad apicem circa basin styli depressum; stylo pubescenti 1-6 cm. longo, apice recurvo.

Baroi. No. 303. A large tree with a stem girth of 8 feet and a bole of 70 feet, 110 feet overall, more or less buttressed to 8 feet.

Allied to *G. Dalrympleana* (F.v.M.) H. J. Lam and to *G. macrophylla* Wall. From the latter it differs in its narrow inflorescence, and from the former in its dense inflorescence.

*Clerodendron Tracyanum* F.v.M. Forests around village of Wasida and along main path to Wire Rope, 171, flowering specimens, July, 1922.

*Clerodendron floribundum* R.Br. Port Moresby, 437, flowering specimens, April, 1922.

*Avicennia officinalis* Linn. The coast near Buna, 211, flowering specimens, August, 1922.

#### FAMILY BIGNONIACEÆ.

*Diplanthera tetraphylla* R. Br. Naro, 2,000 feet, one of the main streams adjoining the headwaters of the Brown River, 272, flowering specimens, August, 1922.

#### FAMILY GESNERIACEÆ.

*Æschynanthus discorensis* Schltr. Ridge between Adai and Naro Rivers, 6,000 feet, East Central Division, 413, flowering specimens, February, 1923.

*Æschynanthus nummularius* K.Sch. Owen Stanley Range, 5,000 feet, 396, flowering specimens, February, 1923.

*Cyrtandropsis monoica* Lauterb. In ravines between Adai and Naro Rivers, 5,500 feet, East Central Division, 415, flowering specimens, February, 1923.

#### FAMILY ACANTHACEÆ.

*Acanthus ilicifolius* Linn. Swamp at Buna, 258, flowering specimens, August, 1922.

#### FAMILY RUBIACEÆ.

*Hedyotis galioides* F.v.M. Ridge dividing Adai and Naro Rivers, 6,000 feet, 412, flowering specimens, February, 1923.

*Sarcocephalus cordatus* Miq. Eight miles west of Buna, Northern Division, 158, foliage specimens.

*Pavetta platyclada* K.Sch. et Lauterb. Forests around village of Wasida and along main path to Wire Rope, 175, flowering specimens, July, 1922.

*Morinda citrifolia* Linn. Buna, 232.

#### FAMILY CUCURBITACEÆ.

*Trichosanthes bracteata* Voigt. Open spaces in rain forests, Owen Stanley Range, 5,000 feet, 375, flowering specimens, February, 1923.

## FAMILY CAMPANULACEÆ.

*Wahlenbergia gracilis* A.DC. Grass Lands, Owen Stanley Range, 6,000–7,000 feet, 369, flowering specimens, February, 1923.

## FAMILY GOODENIACEÆ.

*Scavola novo-guineensis* K. Sch. Owen Stanley Range, 6,000 feet, on the edge of forest and grass land, 371A, flowering specimens, February, 1923.

## FAMILY COMPOSITÆ.

*Vernonia arborea* Hamlt. Iorobaiva, 3,000 feet, Central Division, 429, flowering specimens, February, 1923.

*Oleāria vernonioides* sp. nov. (Text-figure 19).



Text-Figure 19.—*Oleāria vernonioides* sp. nov. 1, flower-bearing twig; 2, flower; 3, disk floret; 4, ray floret.

Frutex 2.7 m. altus (Lane-Poole), partibus junioribus et ramulis et foliis subtus et inflorescentiæ rachide dense pubescentibus; indumento colore variabili, in partibus junioribus ferrugineo in foliis primum flavido deinde albido. Ramuli striati vel leviter costati. Folia petiolata; petiolis pubescentibus 6–10 mm. longis; laminis 6–9 cm. longis  $2\frac{1}{2}$ –3 plo longioribus quam latæ, oblanceolatis, in parte superiore late et obscure denticulatis, apice obtusis vel subacutis, basin versus sensim cuneatis sed basi ipsa

leviter rotunda, nervis lateralibus in utroque latere 10-12 fere horizontalis supra in sicco visibilibus sed non distinctis; costa media et nervis lateralibus et venulis subtus prominentibus et valde elevatis. Paniculæ corymbosæ ex axillis superioribus orientes folia æquantēs vel fere æquantēs, pedunculo usque ad 2.3 cm. longo; ramulis ad basin bracteatis, bracteis infimis foliaceis usque ad 3 cm. longis; pedicellis 2-10 mm. longis bracteatis, bracteis linearibus 2-3 mm. longis. Capitula ca. 1.5 cm. lata et 1 cm. alta, involucri bracteis angustis linearibus 0.5-1 mm. latis margine ciliolatis, apice obtusis vel subacutis, seriei exterioris bracteis longis, seriei interioris bracteis usque ad 5 mm. longis; flosculis 20-30; radii flosculis ca. 10; corollæ tubo 2 mm. longo, ligula spathulata 5 mm. longa, stylo exserto; disci flosculis corollæ tubo 4 mm. longo, limbo 5-lobato, lobis ca. 1 mm. longis, stylo exserto, hujus ramis duobus in dorso rotundis vel convexis in facie interiore planis. Æchinia cylindracea puberula 1.7 mm. longa, pappi setis ca. 30, 3-4 mm. longis, tenuiter barbellulatis.

Owen Stanley Range at an altitude of 6,000 feet. Flowering on 23rd February. No. 368. A shrub, flowers white; Owen Stanley Range, 7,400 feet, flowering specimens, February, No. 359.

This species differs from *O. exilis* S. Moore in its alternate broadly dentate leaves and from *O. monticola* Bail. by its longer and narrower leaves.